

### **Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application:

#### **Listing of Claims:**

1-15. (cancelled)

16. (previously presented): A method of depositing an aluminum nitride layer on an exposed surface of previously deposited insulating layer on a substrate, said method comprising:

treating the exposed surface with hydrogen or a gaseous source of hydrogen in the presence of a plasma; and

depositing the aluminum nitride layer over the exposed surface,

wherein the hydrogen treatment occurs prior to or during the deposition of the aluminum nitride layer, and wherein a duration and plasma power of the hydrogen treatment are sufficient to improve the crystal orientation of the deposited aluminum nitride layer such that the x-ray diffraction peak half width on a crystallographic plane of the deposited aluminum nitride layer is narrowed relative to the x-ray diffraction peak half width on the crystallographic plane of an aluminum nitride layer deposited in the absence of the hydrogen treatment.

17. (previously presented): The method as claimed in Claim 16 wherein the plasma is an Inductively Coupled Plasma.

18. (previously presented): The method as claimed in Claim 17 wherein the substrate is placed on an RF biased platen.

19. (previously presented): The method as claimed in Claim 18 wherein the platen is heated.

20. (previously presented): The method as claimed in Claim 16 wherein the aluminum nitride layer is deposited as a piezoelectric layer of an acoustic wave device.

21. (currently amended): A method of depositing an aluminum nitride layer on an exposed surface of previously deposited insulating layer on a substrate, said method comprising:

treating the exposed surface with hydrogen or a gaseous source of hydrogen in the presence of a plasma; and

depositing the aluminum nitride layer over the exposed surface,

wherein the hydrogen treatment occurs prior to or during the deposition of the aluminum nitride layer, ~~and~~ wherein the plasma is supplied by a Reactive Ion Etching process, and wherein the aluminum nitride layer is deposited as a piezoelectric layer of an acoustic wave device.

22. (previously presented): The method as claimed in Claim 21 wherein the hydrogen treatment time is less than 15 minutes.

23. (cancelled)

24. (previously presented): The method of treating an aluminum nitride layer including subjecting the aluminum nitride layer to atomic hydrogen so as to enhance the  $\langle 111 \rangle$  crystallographic orientation of a conductive layer deposited on the aluminum nitride layer relative to the  $\langle 111 \rangle$  crystallographic orientation of a conductive layer deposited on an aluminum nitride layer which has not been subjected to atomic hydrogen.

25. (previously presented): The method as claimed in Claim 24 wherein the aluminum nitride layer is deposited as a piezoelectric layer of an acoustic wave device.

26. (previously presented): The method as claimed in Claim 24 further including simultaneously subjecting the aluminum nitride layer to hydrogen plasma and depositing the conductive layer by metallic sputtering.